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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,468	07/01/2003	Manabu Kodate	059695-0102	1060

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FOLEY AND LARDNER LLP  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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PIZIALI, JEFFREY J

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/609,468

**Applicant(s)**

KODATE ET AL.

**Examiner**

Jeff Piziali

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2006 and 12 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8,13-18,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8,13-18,21 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed (on 12 December 2006) in this application after final rejection (mailed 23 August 2006). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 6 November 2006 has been entered.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

3. The drawings were received on 10 February 2006. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Instant Application's Description of Prior Art in view of Kim et al (US 6,097,457 A).

Regarding claim 1, the Instant Application's Description of Prior Art discloses an image display element, comprising: a plurality of data lines to which display signals are applied, the data lines being embedded in a substrate; a plurality of scan lines to which scan signals are applied, the scan lines being embedded in the substrate (see Page 1, Lines 10-25); a first wire [Fig. 6A; 32] having a surface which is exposed, the first wire being electrically connected to one of the scan lines; and a second wire [Fig. 6A; 33] having a surface which is exposed, wherein the narrowest distance between the first wire and the second wire but not including the first and second wire is less than  $5\mu\text{m}$  (see Page 13, Line 8 - Page 14, Line 22).

The Instant Application's Description of Prior Art does not expressly disclose the narrowest distance between the first wire and the second wire but not including the first and second wire is more than or equal to  $5\mu\text{m}$ .

However, Kim does teach the narrowest distance [Fig. 6;  $W_2$ ] between a first wire [Fig. 6; 31-1] and a second wire [Fig. 6; 31-2] but not including the first and second wire is more than or equal to  $5\mu\text{m}$  (see Column 4, Lines 37-50).

The Instant Application's Description of Prior Art and Kim are analogous art, because they are both from the shared field of liquid crystal display devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use Kim's wire distance between the first and second wires of the Instant Application's Description of Prior Art, so as to minimize signal distortion and delay in the resultant display.

Regarding claim 2, the Instant Application's Description of Prior Art discloses a potential of the second wire is substantially equal to a potential of a scan line other than the one scan line (see Page 13, Lines 8-21).

Regarding claim 13, this claim is rejected by the reasoning applied in rejecting claim 1; furthermore, the Instant Application's Description of Prior Art discloses a data line driving circuit and a scan line driving circuit (see Page 1, Lines 10-25).

Regarding claim 14, this claim is rejected by the reasoning applied in rejecting claim 2.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 4-6, 16, 17, 21, and 22 are rejected under 35 U.S.C. 102(a) as being anticipated by the Instant Application's Description of Prior Art.

Regarding claim 4, this claim is rejected by the reasoning applied in rejecting claim 1; furthermore, the Instant Application's Description of Prior Art discloses the second wire [Fig. 6A; 33] being arranged at a first distance of less than or equal to 10 $\mu$ m of the first wire [Fig. 6A; 32]; a liquid crystal layer [Fig. 10; 50] disposed between the exposed surface of the first wire [Fig. 10; the surface portion of wire 47 exposed/directly contacting spacer 51] and the exposed

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surface of the second wire; and an insulator [Fig. 10; 51] in direct contact with the entire exposed surface of at least one of the first and second wires [Fig. 10; 47], wherein the entire exposed surface of the at least one of the first and second wires is isolated from the liquid crystal layer by the insulator (see Fig. 10; Page 21, Line 9 - Page 22, Line 14).

Regarding claim 5, this claim is rejected by the reasoning applied in rejecting claim 2.

Regarding claim 6, the Instant Application's Description of Prior Art discloses a counter substrate [Fig. 10; 49] that is disposed opposite to the substrate; wherein the counter substrate is disposed at a second distance from the substrate; and wherein the insulator is a spacer [Fig. 10; 51] that prescribes the second distance (see Page 21, Line 9 - Page 22, Line 14).

Regarding claim 16, this claim is rejected by the reasoning applied in rejecting claims 1, 4, and 13.

Regarding claim 17, this claim is rejected by the reasoning applied in rejecting claim 2.

Regarding claim 21, the Instant Application's Description of Prior Art discloses the first distance from the second wire to the first wire is less than or equal to  $5\mu\text{m}$  [wherein the distance measurement is taken from the left-side edge of the first wire to the right-side edge of the second wire, for instance] (see Page 13, Line 8 - Page 14, Line 22).

Regarding claim 22, this claim is rejected by the reasoning applied in rejecting claim 21.

***Claim Rejections - 35 USC § 103***

8. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Instant Application's Description of Prior Art and Kim et al (US 6,097,457 A) as applied to claims 1 and 13 respectively above, and further in view of Kwon (US 6,486,930 B1).

Regarding claim 3, the Instant Application's Description of Prior Art does not expressly disclose any particular display element arrangement of pixel electrodes and switching devices. However, Kwon does disclose a first pixel electrode [Fig. 5A; 71c] and a second pixel electrode [Fig. 5A; 73c] that are supplied with display signals from one of the data lines [Fig. 5A; D1]; a first switching device [Fig. 5A; 71b] that controls a supply of the display signal in the one data line, wherein the first switching device is electrically connected between the one data line and the first pixel electrode and that has a gate electrode; a second switching device [Fig. 5A; 71a] that is electrically connected between the gate electrode of the first switching device and one scan line [Fig. 5A; G1]; and a third switching device [Fig. 5A; 73] that is connected to the one data line and that controls a supply of the display signal to the second pixel electrode (see Column 3, Line 59 - Column 4, Line 36).

The Instant Application's Description of Prior Art and Kwon are analogous art, because they are both from the shared field of active matrix liquid crystal display devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the substrate fabrication techniques of the Instant Application's Description of Prior Art to

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manufacture Kwon's multiplexed image structure, so as to reduce the necessary number of data lines.

Regarding claim 15, this claim is rejected by the reasoning applied in rejecting claim 3; furthermore, Kwon discloses a first pixel electrode [Fig. 5A; 73c] and a second pixel electrode [Fig. 5A; 71c] that are supplied with a display signal from a same data line [Fig. 5A; D1]; a first switching device [Fig. 5A; 73] that controls the supply of the display signal from the data line to the first pixel electrode, and that is driven based on a scan signal supplied from a first scan line [Fig. 5A; G1]; a second switching device [Fig. 5A; 71b] that controls a supply of the display signal from the data line to the second pixel electrode, and that is driven based on a scan signal supplied from a second scan line [Fig. 5A; G2] subsequent to the first scan line; and a third switching device [Fig. 5A; 71a] that is driven based on the scan signal supplied from the first scan line, and that controls ON and OFF of the second switching device (see Column 3, Line 59 - Column 4, Line 36).

9. Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Instant Application's Description of Prior Art in view of Kwon (US 6,486,930 B1).

Regarding claim 8, this claim is rejected by the reasoning applied in rejecting claim 3.

Regarding claim 18, this claim is rejected by the reasoning applied in rejecting claims 3 and 15.



***Response to Arguments***

10. Applicants' arguments filed 6 November 2006 (with respect to claims 1-3 and 13-15) have been considered but are moot in view of the new ground(s) of rejection.

11. Applicants' arguments filed 6 November 2006 (with respect to claims 4-6, 8, 16-18, 21, and 22) have been fully considered but they are not persuasive. The applicants contend the cited *Instant Application's Description of Prior Art* neglects teaching a liquid crystal layer disposed between the exposed surface of the first wire and the exposed surface of the second wire; and an insulator in direct contact with the entire exposed surface of at least one of the first and second wires, wherein the entire exposed surface of the at least one of the first and second wires is isolated from the liquid crystal layer by the insulator (see Pages 8-9 of the 'Amendment and Reply Under 37 CFR 1.111' filed 6 November 2006). However, the examiner must respectfully disagree.

The Instant Application's Description of Prior Art discloses a liquid crystal layer [Fig. 10; 50] disposed between the exposed surface of the first wire [Fig. 10; the surface portion of wire 47 exposed/directly contacting spacer 51] and the exposed surface of the second wire; and an insulator [Fig. 10; 51] in direct contact with the entire exposed surface of at least one of the first and second wires [Fig. 10; 47], wherein the entire exposed surface of the at least one of the first and second wires is isolated from the liquid crystal layer by the insulator (see Fig. 10; Page 21, Line 9 - Page 22, Line 14).

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Piziali  
2 March 2007